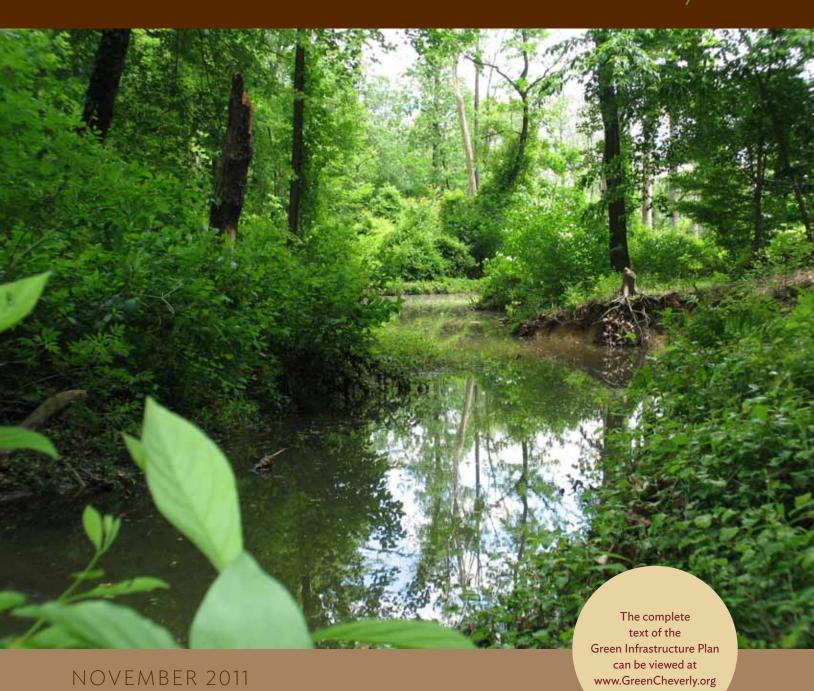
# CHEVERLY GREEN INFRASTRUCTURE PLAN SUMMARY

Preserving a thriving, healthy environment for a sustainable community



# Mission of the Cheverly Green Infrastructure Initiative

Preserve, restore, and sustain the natural environment of Cheverly and surrounding areas as an intact and healthy ecosystem, through a community participatory process, balancing the fulfillment of human needs and protection of the natural environment. This plan will help guide future development, redevelopment, and investment policy decisions in a proactive and sustainable manner within and around the Town of Cheverly.

The Town Council of Cheverly, Maryland, endorsed the Green Infrastructure Plan recommendations on September 8, 2011.

#### **GREEN INFRASTRUCTURE PLAN STEERING COMMITTEE**

Includes all who have served at any time over the period from May 2008 to September 2011

Jeremy Coon

Co-Chair; Chair, Cheverly Planning Board Chair, Land Use and Built Environment Working Group

R.J. Eldridge

Co-Chair, Cheverly Town Council Chair, Mapping and Data Analysis Working Group

Joe Fontana

Co-owner, MOSAIC Print Chair, Finance Working Group

Michael Giese

Cheverly Garden Club

Melanie Hartwig-Davis

Cheverly Parent Resource Center

**Stephen Johnson** 

Fourth Ward Civic Association

**David Kneipp** 

Cheverly Garden Club

Nathan McElroy

Cheverly Tree Commission
Chair, Tree Canopy Working Group

Norman Oslik

**Progressive Cheverly** 

Leila Price

Fourth Ward Civic Association

Cynthia Robinson

Progressive Cheverly

Chair, Education and Outreach Working Group

Matt T. Salo

Friends of Lower Beaverdam Creek Chair, Science Advisory Committee

Sheila Salo

Cheverly History Club Researcher, Website Manager

**Dan Smith** 

Friends of Lower Beaverdam Creek Chair, Stormwater Management Working Group

Technical Advisor:

Wink Hastings

Landscape Architect, National Park Service, Chesapeake Bay Program

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Michael Giese Dan Smith

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### I FTTER FROM THE MAYOR OF CHEVERLY

To Cheverly Residents,

On September 8th, 2011 the Cheverly Town Council unanimously passed Resolution R-6-11 adopting the recommendations of the Green Infrastructure Committee. The vote culminated three years of effort by a dedicated team of Cheverly residents. These individuals freely volunteered their time and created a decision-making framework that will help to preserve and enhance Cheverly's natural assets.



The Committee's recommendations build upon Cheverly's legacy of leadership on environmental issues. Since the 1970s residents have worked to protect Lower Beaverdam Creek and the Cheverly Nature Park, initiated the first paper recycling programs, and pushed for a yard waste disposal program. Furthermore, resident concerns for the environment are reflected in the actions of our town government, which recently instituted an electronics recycling program, used federal grant dollars to build a wind turbine, and installed two 1,000-gallon cisterns to divert and collect stormwater.



Utilizing the framework provided by the Green Infrastructure Committee, our town government plans to continue its efforts. We recently joined the Baltimore Washington Partners for Forest Stewardship, a recommendation of the Committee, to work with other government organizations to preserve forests in the area. Cheverly also applied for certification from the Sustainable Maryland program offered by the University of Maryland. This program will allow us to measure our progress as we move forward.

However, stewardship of our natural resources is not just the responsibility of our town government. The Committee's recommendations outline actions each resident can take that when combined yield huge benefits.

Simple actions such as planting a tree, reducing the use of fertilizers, composting, or installing a rain barrel not only help the environment but also reduce the cost of town government and your utility bills.

Please take a moment to read the list of committee and working group members and those sighted in the acknowledgements, and when you meet these individuals in the community, thank them for their efforts. They worked hard to provide a framework that encompasses the many ideas that percolate throughout our community.

I especially want to thank the National Park Service who loaned us Wink Hastings to shepherd this effort, the Friends of Lower Beaverdam Creek who not only invest heavily in the preservation of our natural spaces but were also at the forefront of this effort, and to the children of our community (especially the Scouting organizations) who are always there to inspire us with their enthusiasm.

I encourage everyone to read, participate in and embrace this plan!

Regards,

Mike Callahan

### INTRODUCTION

Cheverly is known as a green oasis — a small-town refuge with tree-lined streets to which people gravitate to get away from the heat, noise, and congestion of big city life. Cheverly is also part of a highly developed metropolitan area that has suffered environmental degradation that impacts quality of life, property values, and equitable access to environmental benefits. Cheverly has the opportunity to preserve and enhance the richness of its natural areas, which provide clean air, water, fertile soil, plants, and wildlife. These together help maintain conditions necessary for good health, our quality of life, and for life itself.

The Green Infrastructure Plan helps elected officials, town staff, community organizations, and residents to consider the town's needs as a whole. It provides a comprehensive framework for protecting green space, managing water resources, and making land use decisions. A plan endorsed by town government provides context to evaluate projects and new initiatives

MATT T. SALO

and assess how they reinforce or extend the aims of the plan. It also aids efforts to obtain grants and other support to implement green initiatives in our community. The Cheverly Green Infrastructure Plan will enable the town to better meet future challenges and to recognize and take full advantage of opportunities.



SATHY SMITH



The goal of the Green Infrastructure Plan is to achieve a balance between the fulfillment of human needs and the sustainability of natural resources so that these needs can be met not only in the present but also in the indefinite future. The primary purpose of the plan is to expand, enhance, and restore Cheverly's natural environments as intact and healthy ecosystems capable of providing the multiple ecological and economic resources and services that are necessary to sustain our community.

The Cheverly Green Infrastructure Plan is intended as a living document that can be modified as needed. Successful implementation requires commitment and collaboration by

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the town, community organizations, businesses and institutions, and Cheverly citizens, as well as cooperation with other levels of government.

This summary of the Cheverly Green Infrastructure Plan provides information on the benefits of maintaining fully-functioning ecosystems in our community, a brief description of Cheverly's natural resources, a summary description and map of the natural areas network, information on our natural capital and the services it provides, and a table outlining recommendations for different stakeholders and time frames for implementation. The full text of the Green Infrastructure Plan provides more detail and is available at www.GreenCheverly.org.

#### STABILITY PYRAMID

# Green Infrastructure

Green infrastructure is an interconnected network of waterways, wetlands, grasslands, woodlands, and other natural areas that support native plant and animal diversity; maintain natural ecological processes; sustain soil, air, and water resources; stabilize climate; and contribute to the health and quality of life for our community and region.

### **Built Capital**

Gray Infrastructure
human-engineered
materials and structures —
roads, sewers, buildings, etc.

#### **Human and Social Capital**

People, Places, and Connections family, neighborhoods, communities, government, education, and health systems

#### **Natural Capital**

Natural Resources air, soil, water, trees and vegetation, animal life, land, renewable energy

#### **Viable Ecosystems**

Green Infrastructure

interconnected natural areas supporting a diversity of healthy plants and animals and properly functioning natural processes, including the water cycle, food chain, evapotranspiration, and plant succession

Green roofs, rain gardens, and urban tree cover are increasingly important elements of green infrastructure in the built environment. The roads, buildings, water systems, sewers, schools, rails, and other physically engineered underpinnings of modern life are called gray infrastructure.

The basic building blocks of a green infrastructure network are hubs and corridors. Hubs are ecologically significant natural areas that provide habitat for plant and animal life. Corridors are the linear features connecting hubs to help plant and animal life move between the hubs.

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### SUMMARY OF RECOMMENDATIONS

Based on prior green infrastructure achievements in Cheverly, accumulated scientific data on our local environment, information on best green practices and strategies, input from citizens and civic groups, and participation in county-level meetings, specific recommendations were developed for a green plan, a natural areas network, water management, land use and the built environment, and outreach and education. These are summarized broadly below. The full list of detailed recommendations is compiled in the chart beginning on page 18.

# Implement and Maintain the Cheverly Green Infrastructure Plan

- Appoint a formal town body to coordinate comprehensive implementation of the recommendations of the Green Infrastructure Plan.
- Establish benchmarks and timelines for achieving goals, monitor and assess progress and report annually to the Town Council and citizens.
- Dedicate and pursue funding for implementation.
- Consider the Green Infrastructure
   Plan goals when reviewing or revising
   the municipal code and in prioritizing
   resources (e.g., Program Open Space
   funds).
- Increase effectiveness in planning, evaluation, and implementation by consulting specialists as appropriate.

# Establish a Natural Areas Network of Hubs and Corridors

- Establish and preserve a system of five hubs and connecting corridors to be managed as functioning ecosystems capable of providing multiple ecosystem services.
- Establish and manage "green ribbons" of backyards and alleys.

# Preserve, Maintain, and Improve Cheverly's Natural Capital

- Reduce and manage stormwater runoff and improve water quality by adopting on-site stormwater management practices and reducing impervious surface area to a maximum of 18 percent from the current 23 percent.
- Maintain the services provided by Cheverly's urban tree cover by adopting a town-wide tree canopy goal of 40 percent: 50 percent for residential areas and 25 percent for commercial, industrial, and institutional (i.e., town, church and school) areas.

## Implement Public Awareness, Education, and Stakeholder Engagement Activities

- Coordinate initiatives to educate and engage citizens, organizations, businesses, towns, schools, and institutions and other local and regional partners in actions that achieve the Cheverly Green Infrastructure Plan goals.
- Encourage sustainable land use practices and green building techniques.
- Create with community
   organizations an online Cheverly
   Green Guide with practical
   suggestions for homeowners,
   businesses, and institutions;
   information on Cheverly's
   natural areas, native vegetation,
   soils, wildlife, hydrology, and
   stormwater; and tips and resources
   on environmentally friendly
   landscaping and building practices.



### BACKGROUND

In early 2008, based on concerns about the loss of natural habitat and deteriorating environment, members of the community group Friends of Lower Beaverdam Creek urged the Cheverly Town Council to appoint a committee to develop a green infrastructure plan supported by the best available scientific information, guided by green infrastructure principles and practices, and informed by community input.

The Town Council appointed the Green Infrastructure Plan Steering Committee in May 2008. It began by establishing working groups to research and address key issues to create a comprehensive green plan, map, and implementation recommendations. The working groups reviewed existing information on Cheverly's natural areas and resources, collected additional data, assessed the health of Cheverly's environment, and gathered citizens' input on environmental concerns and opportunities.

Citizens voiced concerns about a range of issues:

- sprawl and polluted waterways
- invasive species and loss of trees, plants, and animals
- traffic noise and congestion
- flooding, water damage, and erosion
- too few and disconnected walking and biking trails
- · diminished air quality and increasing temperatures
- high energy costs
- a decline of areas to enjoy nature



They consistently expressed a desire to preserve and maintain Cheverly's natural environment and urban tree cover. This input, along with detailed reports issued by the Science Advisory Committee and the Land Use and Built Environment Working Group, and a review of some of the green infrastructure practices and initiatives of similar communities across the country contributed to the Cheverly Green Infrastructure Plan.

# The Cheverly Environment

The area that today is Cheverly was a land of plantations and farms in the early 1800s. When farming ceased, woods grew back in former fields and then were cleared again for development. Founded in 1918 and incorporated in 1931, Cheverly is now home to a diverse population of more than 6,300 residents with approximately 2,300 housing units across a 1.27 square-mile area located one mile east of Washington, D.C.

Much of Cheverly is now surrounded by three major highways — Routes 50, 295 and 202 — and three rail lines. These fragment our population and lands and partially isolate our natural areas from the larger natural network of the region. Air quality has also suffered from increased traffic, industrial, and residential emissions. (See map on page 10.)

The area hydrology has been disturbed by excavation and increasing areas of impervious surfaces (i.e., those that do not allow water infiltration, such as streets, parking lots, roofs, driveways, and concrete patios). Many stretches of streams have been rerouted and piped, and all are subjected to large volumes of polluted runoff. Studies conducted by the Maryland Department of Natural Resources document that most of Cheverly's streams support little or no aquatic life. The streams show overt signs of erosion and siltation and accumulate large quantities of trash that is flushed from our streets through the county-maintained stormwater system.



Our forests are fragmented and suffocated by invasives, which are destroying trees and native plants. Very few old trees remain and native vegetation is greatly reduced in diversity, with many species existing only in scattered, isolated patches. Our wildlife is increasingly threatened by a disconnected and ever-diminishing habitat and subjected to additional stress from noise and light pollution.

These problems dramatically affect quality of life as habitats lose their ability to provide ecosystem services that benefit the community. Local environmental degradation also impacts adjacent communities, the Chesapeake Bay, and the larger region.

# **Building on Accomplishments**

The Cheverly Green Infrastructure Plan builds on and is strengthened by past and current efforts and accomplishments of town government, community groups and citizens, and regional initiatives.

The Town of Cheverly has acquired natural areas, instituted mandatory recycling, and introduced electronics recycling. It collects yard waste and converts it to mulch for local use. It has installed rain cisterns at Town Hall and a wind turbine at the Department of Public Works — the first of its kind



in the county. The town also conducts street and residential tree plantings, and it supports community and citizen initiatives



**JAN SMITH** 

such as creation of the Cheverly Community Gardens, stream

cleanups, and education programs, including rain barrel and composting workshops.

Since 2004, the community group Friends of Lower Beaverdam Creek has recruited volunteers for stream cleanups; restored native plant species; removed invasive species and trash from our parks; and installed and maintained trails in Woodworth Park. It has organized nature hikes and school field trips; stream,



DAVID KNEIPF

plant and animal surveys; water quality research; annual bird counts; and published Birds of Cheverly. It also has been an advocate for better county policies that affect the environment.

The Cheverly Garden Club links people to the environment through gardening and education. It conducts an annual plant sale featuring many local native species. The Environmental Committee of the community group Progressive Cheverly promotes active participation in green

> initiatives via green home and garden tours, and rain barrel and composting workshops. It instituted Cheverly's green home certification program and led the establishment of the Cheverly Community Gardens. The Cheverly Community Market offers fresh regional foods and other products, and builds community interaction. Other community groups and citizens have been active in a range of activities, including installation of storm drain signs across Cheverly.

# Contributing to Regional Efforts

The Cheverly Green Infrastructure Plan improves not only our community but also regional initiatives. It contributes to implementation of the Prince George's Countywide Green Infrastructure Plan, the Water Resources Functional Master Plan, Tuxedo Road-Arbor Street-Cheverly Metro Area Sectional Map Amendment, the Subregion 4 Master Plan, and the Countywide Master Plan of Transportation. It is also broadly in keeping with the Maryland Wildlife Diversity Conservation Plan of 2005. And it addresses the intent of the Good to Green to Great Initiative of County Executive Rushern Baker and supports the Envision Prince George's aims.

The Cheverly Green Infrastructure Plan also addresses Chesapeake Bay Program restoration recommendations, including reduction of residential stormwater runoff, decrease in residential fertilizer use, reduction of pet waste runoff, and support for watershed organizations.



In addition it will help the Town of Cheverly, Prince George's County, and the State of Maryland to meet specific new "pollution diet" limits now being established for the Chesapeake Bay.

### BENEFITS OF ECOSYSTEM SERVICES

Green infrastructure provides enormous benefits free of cost through healthy, functioning ecosystems. In Cheverly, these ecosystems are at work primarily in the natural area hubs, corridors and adjacent green areas. The natural resources that green infrastructure supports — our soils, streams and wetlands, trees, shrubs and other vegetation, and local animal life — and the critical functions they contribute are outlined in the section on natural capital on page 13. More details are available at www.GreenCheverly.org.

The benefits of maintaining our few remaining natural areas as functioning

ecosystems generally far exceed those we might get from putting these areas to other uses. Often we become aware of these critical services only after their loss, and many are beyond our current ability to replicate. Degradation and destruction of the



environment requires huge investments to supply or substitute services such as water and air purification, cleanup of contaminated soils, flood control, supplies of reliable clean water, removal of greenhouse gases and storing carbon, regulating the temperature and humidity of our buildings, waste removal, pollution abatement, pollination management, and soil fertilization.

Implementing green infrastructure strategies demonstrates that individual and community actions foster positive results and help to cost-effectively guide many town policy decisions. Because protecting and enhancing our green infrastructure is cheaper in the long run than major and repeated capital expenditures to achieve the same aims, it also makes economic sense. Green infrastructure provides significant, real return on investments for the health of our citizens and the vitality of our community as a whole.

## Beyond Green

In addition to benefits for the environment and human health, implementation of the Cheverly Green Infrastructure Plan contributes social and economic benefits important for a more livable and sustainable community.

#### **Social**

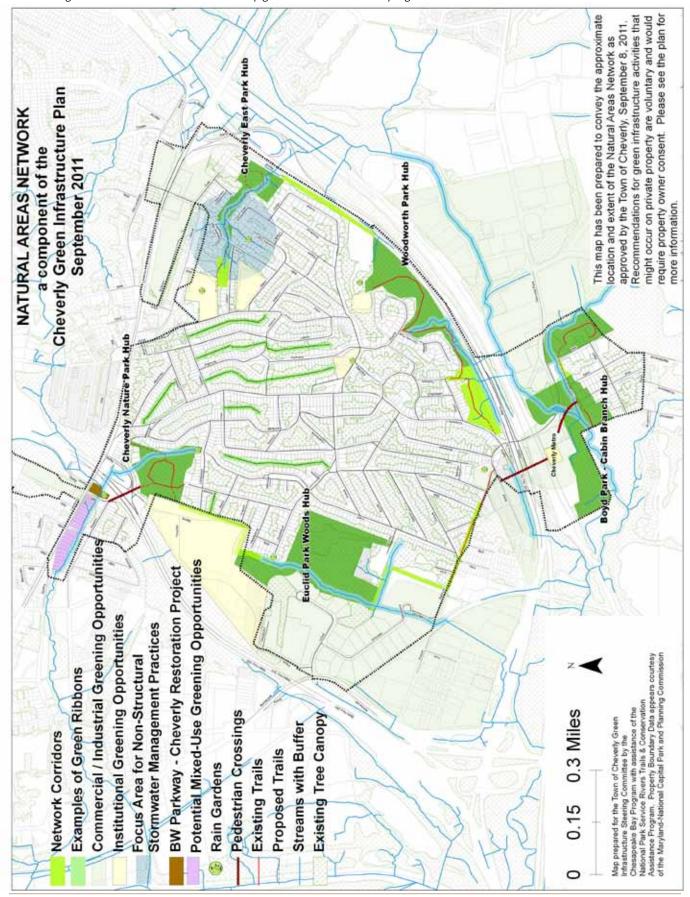
- Provides spaces for relaxation, recreation, and learning
- Contributes to good health, well-being, and happiness
- Fosters interaction with nature and neighbors and results in an appealing place to live and work

#### **Economic**

- Reduces resource demand and costs, lowers insurance and repair expenses, and cuts need and costs for maintenance
- Attracts and retains residents and businesses
- Offers a high livability standard that enhances property values

# Cheverly Green Infrastructure Map

To see a larger view or download a PDF of the map go to www.GreenCheverly.org.



### THE NATURAL AREAS NETWORK

Cheverly is part of the Maryland Upper Coastal Plain located in one of the richest biological crossroads in the country. The forests of our rolling hills and valleys are primarily oak and pine. Prairie grasses such as Indian or Little Bluestem are still found in open woodland glades. Unique plants are

found in each of our natural areas.

Lower Beaverdam Creek and Quincy Run, which originates here, flow into the nearby Anacostia River, one of the most polluted in the Chesapeake Bay region. Four small, unnamed tributaries draining the largest part of Cheverly, and Cabin Branch, flow into Lower Beaverdam Creek, either directly or through pipes. Four wetland areas are of considerable value as the only major filters and purifiers of water running into polluted area waterways.

Within Cheverly there are five natural areas that form the hubs of our infrastructure network.

Connecting the hubs by corridors is essential for a system that provides resiliency in the face of natural and human disturbance. The corridors facilitate movement of species among the hubs which helps counter the effects of fragmentation and enriches biodiversity. The hub descriptions follow.

Hubs: Environmental Education Area, Community Woodlands, Natural Resource Area

#### **ENVIRONMENTAL EDUCATION AREA**

**Woodworth Park:** The Woodworth Park hub is unique with its wide variety of terrain from hilly upland to a marsh fed by Tributary 3. The marsh filters and purifies water, enabling the downstream part of the creek to support a variety of aquatic life. The park also includes older trees, mountain laurel, native azaleas, wildflowers, and a popular trail built by volunteers.

#### **COMMUNITY WOODLANDS**

**Boyd Park-Cabin Branch:** The largest of Cheverly's natural areas is the Boyd Park-Cabin Branch hub that includes the forested flood plains of Lower Beaverdam Creek and Cabin Branch. The floodplains preserve the largest patches of wildflowers in Cheverly. The creeks support species found only around water, such as ducks, herons, and kingfishers and even the occasional otter. Boyd



Park contains a small patch of hardwoods, a hard surface fitness path, a playing field and picnic area, and the Cheverly Community Gardens. The floodplain is already under federal protection. However, its vegetation is severely threatened by invasive species.

**Cheverly East Park:** The Cheverly East Park hub borders Tributary 4, with a wooded area adjacent to Route 50. It features some old trees and a well-developed shrub layer. Tributary 4 is bereft of aquatic life, largely due to several storm drain outfalls channeling polluted water from town streets.

**Nature Park:** The Cheverly Nature Park hub, with its alternating ridges and ravines, provides cover for smaller animals and woodland birds. Pine and hardwood trees dominate, with chestnut oak being the most plentiful. Mountain laurel is common. Ground level vegetation includes locally rare Indian cucumber-root, spotted wintergreen, ground pine, and partridgeberry. It is also the headwaters of Quincy Run. English ivy and oriental wisteria are the predominant invasive plants.







#### **COMMUNITY NATURAL RESOURCE AREA**

**Euclid Park:** The Euclid Park hub adjoins the Cheverly Euclid Park recreation area. It is the richest hub in both plant and animal species and thus functions as a source for biodiversity to replenish the other hubs. It features a range of tree and shrub species, and the herbaceous plant layer is slowly returning as invasive species are removed. A deep stream ravine, gullies, scrub pine stands, and prairie-type grassy glades offer unique microhabitats. Tributary 1, which runs along the park's western border, is essentially devoid of aquatic life due to heavy siltation from a construction site. The wetland adjacent to the creek is also affected by sediment runoff and disturbed hydrology. Runoff from the adjacent playing field is eroding gullies in the woods.

### Corridors

Connecting corridors between the separated natural area hubs are essential to maintain healthy biodiversity. Cheverly's currently available corridor routes (see map) can be enhanced in the future to complete links among our natural areas. Directly connecting hubs with natural area corridors is preferred. Where this is not possible or practical due to other uses (such as roads and buildings), some landowners already voluntarily maintain these sites, resulting in fewer gaps between hubs.

# Backyard Woods, Utility Corridors, and Alleys

Many of Cheverly's deep backyards, utility corridors, and little-used alleys provide rich and largely underappreciated habitat and corridors for plants and wildlife. The voluntary protection of these "green ribbons" of contiguous wooded areas will greatly reduce corridor gaps and significantly increase valuable habitat and tree canopy.



# Help Preserve Cheverly's Green Ribbons

Many of Cheverly's residential back yards help form connected wooded areas — our "green ribbons." These areas

range from less than an acre to nearly three acres in size. Protecting nature in your own back yard can contribute to keeping Cheverly green. Join with your neighbors to preserve, maintain, and increase these natural treasures. Share ideas and plan and carry out green management projects, including surveying trees and other vegetation, removing invasive species, and planting native trees and plants.

danger of being used up faster than they can



CATHY SMIT

be regenerated unless carefully stewarded. The central purpose of the Cheverly Green Infrastructure Plan is to assure that these resources are sustainable and remain available and viable in the future.

Ecosystems: It's all connected! An ecosystem consists of all living and nonliving components of a particular area that interact and exchange material with one another. It is a set of interacting and interdependent components forming an integrated whole. Because all of its parts contribute to the system, the loss of any one of them can have serious detrimental effects on the function of the system as a whole.

### Soil

Soil is the foundation of all green infrastructure, providing essential ecosystem services. Our soils:

- nurture microorganisms that modify chemicals into nutrients that plants need to flourish;
- store carbon, which helps reduce global warming;
- retain, filter, purify and release water slowly to replenish our aquifers, helping reduce flooding and erosion; and
- capture waste and toxic substances.

Degradation of productive soils is of increasing concern. Soils in Cheverly are affected primarily by:

- development involving clearcutting, excavation, grading and construction;
- creation of highly impervious paved or compacted surfaces such as parking lots, driveways and playing fields;
- erosion caused by stormwater runoff; and
- chemical pollution and waste from industry, commercial establishments, residences, and vehicles.

Application of green infrastructure practices will help replenish and protect the soil that nourishes our natural environment.

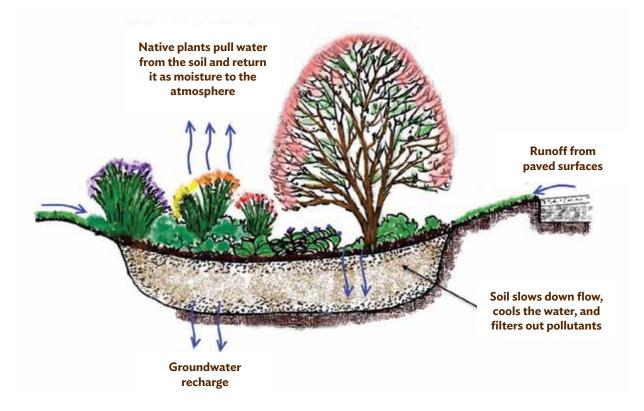
### Water

Clean water is essential for all of life. When neglected and abused, water resources become a detriment rather than an asset. A naturally operating water cycle provides many different services, including:

- fresh rainwater to supply our waterways and recharge area aquifers;
- regulation of water flow and velocity that minimizes erosion and excessive silting;
- filtering and absorbing contaminants and

excessive nutrients that will help restore the Anacostia River and Chesapeake Bay;

- oxygenating and cooling water;
- providing nutrients that support aquatic life; and
- educational, recreation, and leisure activities.



The replacement of forests and wetlands with the impervious surfaces of roads, parking lots, and buildings prevents the natural infiltration of rainwater. The most serious and damaging water pollution and degradation in the region is caused by unchecked stormwater runoff. Most water pollution is caused by stormwater flushing nutrients, chemicals, litter and sediments from industrial and commercial sites, streets, parking lots, driveways and patios, as well as lawns and highly compacted surfaces such as playing fields.

According to the Center for Watershed Protection, stream quality declines when impervious surface area in a watershed exceeds 10 percent, with severe degradation anticipated beyond 25 percent impervious cover. A 2009 analysis reported impervious surface area in Cheverly at 23 percent, at the threshold for severe degradation.

Past practices to quickly pipe runoff to nearby streams are being replaced by methods that maximize on-site infiltration and retention of water in ways that mimic natural systems and provide ecosystem services in the built environment. Implementing and maintaining the Cheverly Green Infrastructure Plan incorporates these strategies and will provide a proactive, cost-effective approach to reduce runoff and to restore area waterways.

# Trees and Vegetation

Trees, shrubs, grasses and other plants, from their roots to leaves and fallen organic material also contribute to essential services. They:

- help retain and filter stormwater and buffer the force of heavy rain, reducing runoff volume and velocity that cause soil damage and erosion and siltation on our waterways;
- produce oxygen and remove carbon dioxide and other greenhouse gases that contribute to climate change;
- remove polluting gases and particulates to purify the air;

Cheverly has good tree and shrub diversity; however, there has been a decline in tree canopy as well as the animals that are dependent on it. Due to habitat destruction or disturbance, many plants are now extinct or seriously endangered. Invasive plant species have taken over much of the area formerly supporting native vegetation, forming thick mats of monoculture instead of the previous critical diversity.

- provide shade and wind buffers that help reduce energy costs for cooling and heating;
- help regulate local hydrology, rainfall, and humidity and maintain a stable climate; and
- break down waste materials, convert and store nutrients required for healthy plant growth and form new soil.



**3RIAN MOSLEY** 

Pollution has weakened many of our forest trees, making them vulnerable to storms, insects and disease. Street trees also suffer from disturbed or compacted soil, pollution, physical damage, drought, and many other ills and as a result live only one-tenth as long as trees growing under natural conditions. The more mature the tree, the more services it can deliver. Exotic ornamental trees and shrubs contribute little or nothing to the functioning of our native ecosystems.

Fortunately Cheverly's natural areas still have remnants of previous wildflower and other plant populations, and their seed banks retain the potential to repopulate much of the former vegetation. These areas in combination possess sufficient diversity that with care will regenerate most of the plant populations native to our town and the Chesapeake Bay region. They also help preserve biodiversity by providing wildlife habitat.

Keeping older trees alive longer and planting more large canopy trees to meet aggressive tree canopy goals is important for a sustainable Cheverly and a healthy Chesapeake Bay.

Healthy Plants = Clean Air = Healthy Families Air pollution harms living organisms and damages both the natural and built environment. As a community within the Route 495 beltway, Cheverly is directly impacted by poor air quality, especially from vehicular emissions. Reduced air quality is among the causes of a rapid increase in respiratory illness among children. Asthma is a serious and complex chronic respiratory disease with no known cure that currently affects an estimated 500,000 Maryland children and adults. Asthma has numerous direct and indirect impacts on patients, their families, and society. In Prince George's County the number one cause of childhood hospitalizations, ages zero to 17, is asthma.\* Trees and other vegetation remove polluting gases and particulates to purify the air and provide a healthy environment.

\*MARYLAND ASTHMA CONTROL PROGRAM; ASTHMA PROFILE: PRINCE GEORGE'S COUNTY, SEPTEMBER 2009

### **Animal Life**

The importance of animal life is often neglected in assessments of what should be conserved. Yet it is the interdependence of plants and animals that keep ecosystems functioning and make life possible by providing a multitude of ecosystem services. Animal life, ranging from microbes and insects to birds and larger animals, support:

- pollination of plants and seed dispersal;
- waste removal, decomposition and detoxification;
- nutrient recycling, nitrogen fixation, and production of organic fertilizer;
- vital natural chemical transfers such as carbon, nitrogen, sulphur, and phosphorus cycles;
- maintaining balance among plant and animal populations to prevent overexploitation of the environment, loss of key species, and the spread of pests or pathogens, such as West Nile virus or Lyme disease; and
- maintenance of biodiversity.



# LAND USE AND OUR BUILT ENVIRONMENT

Green infrastructure results in more efficient and sustainable land use and development patterns, while protecting natural ecosystems and the services and benefits they provide.



Cheverly benefits from its layout of town streets that complement the natural topography, and deep property lots that allow some backyard areas to remain in a natural state. The town's use of state Program Open Space funds to purchase park land and efforts to prevent potentially destructive land use have contributed to the natural areas we have today.

Yet, Cheverly bears the burden of local development and the virtual wall of highways and rail lines around and through much of the

town, which bring pollution and create barriers for hiking and biking trails. These

have seriously altered the character and functioning of Lower Beaverdam Creek and the adjacent floodplain. The Cheverly Green Infrastructure Plan identifies sites that are valuable to the community as natural areas and connecting corridors to help address these challenges.

The plan also identifies sites where green redevelopment practices can help maximize ecosystem services and benefits. Green building techniques can make our homes and commercial buildings more energy-efficient, limit our carbon footprint and significantly reduce our impact on area streams. Residents can install permeable driveways, patios,



CYNTHIA ROBINSON

and walkways. We can also work with the county to encourage the widespread replacement of flat asphalt



roofs on commercial and industrial buildings with pollution-fighting, cooling, vegetated roofs (or solar or white reflective roofs where that is not feasible). Asphalt roofs need replacement every 20 years, while green roofs last twice as long and also provide energy, water, and clean air benefits.

The sooner we establish and implement green development policies and strategies the sooner we will realize the benefits, including long-term cost savings.

## GREEN PLAN RECOMMENDATIONS

The following table outlines recommendations and identifies the various stakeholders whose actions are necessary to implement the Cheverly Green Infrastructure Plan. It also provides time frames for accomplishing the recommendations. The detailed plan and recommendations can be viewed at www.GreenCheverly.org.

				Z	Н Н Д	2	
Green Infrastructure Plan Recommendations	Time	Town	*2ID	Community	Residents	Businesses/	Other
	Frame			Groups		Institutions	Agencies
I	R V I E W						
Adopt the Cheverly Green Infrastructure Plan and establish a formal body to coordinate its implementation	Short	×					
Establish benchmarks and timelines for achieving goals	Short	×	×				
Dedicate and pursue funding for implementation	Medium	×	×				
Coordinate initiatives to educate and engage citizens, organizations, businesses, towns, schools and institutions, and other local and regional partners in actions that achieve the Green Infrastructure Plan goals	Ongoing	×	×	×	×	×	×
Monitor and assess progress; report annually to the Town Council and citizens	Ongoing	×	×				
Establish and preserve a natural areas network including a system of five hubs and connecting corridors	Establish, short; Implement, long	×	×				
Adopt on-site stormwater management as the optimal approach and reduce impervious surface area to 18% from the current 23%	Adopt, short; Implement, long	×					
Adopt a town-wide tree canopy goal of 40%: optimally 50% for residential areas and 25% for commercial, industrial and institutional (i.e., town, church, and school) areas, to be achieved by 2035	Adopt, short; Implement, long	×					
Consider the Green Infrastructure Plan goals when reviewing or revising the municipal code and in prioritizing resources, (e.g., expenditures from Program Open Space or to protect the tree canopy and encourage stormwater retention on-site)	Long	×					
Create an online Cheverly Green Guide with practical suggestions for homeowners, businesses, and institutions; information on Cheverly's natural spaces, native vegetation, stormwater runoff reduction, and environmentally friendly building practices	Medium	×	×	×			
Increase effectiveness in planning, evaluation, and implementation by consulting specialists as appropriate	Ongoing	×	×				×
NATURAL AR	E A NE	T W O R	¥				
Protect/manage Cheverly Nature Park Hub, Boyd Park-Cabin Branch Hub and Cheverly East Side Park Hub as community woodlands; Euclid Park Hub as a natural resource area; and Woodworth Park Hub as an environmental education area	Establish, short; Implement, long	×	×	×			
Establish, preserve and manage corridors connecting the natural area hubs	Short/Long	×	×	×			

Short ≤ one year; Medium = up to 5 years; Long > 5 years \*Green Infrastructure Committee

Establish and manage "green ribbons" of back yards and utility alleys

 $\times$ 

 $\times$ 

 $\times$ 

Medium

				IMPLEM	ENTAT	z o	
Green Infrastructure Plan Recommendations	Time Frame	Town	elC*	Community Groups	Residents	Businesses/ Institutions	Other Agencies
Promote the protected areas and linking corridors, improve access, install educational signage, and develop programs engaging residents to enjoy, appreciate, and conserve these community resources	Medium	×	×	×			
Collaborate with Pepco and other appropriate authorities to preserve and manage utility rights-of-way and alleys as viable natural resource corridors	Medium	×	×	×			×
Develop a system of walking and bike trails for Cheverly, with connections to existing trails in surrounding jurisdictions	Long	×	×				×
Apply green infrastructure plan criteria and priorities to enlarge the network and fill gaps	Medium	×	×	×			
Develop guidelines and incentives to protect wooded areas surrounding the hubs and corridors	Medium	×	×	×			
Use natural vegetative cover to buffer natural areas and corridors against noise, trash, noxious emissions, and wind	Medium	×	×	×	×	×	
Increase tree buffers along streams	Medium	×	×		×		
Keep public access modifications to natural areas low impact; do not remove native vegetation or disturb wildlife	Medium	×	×	×	×		
) S	7 1 0						
Preserve topsoil layer and minimize deep excavation to protect soil health	Long	×	×		×	×	
Use permeable surfaces where feasible to allow water absorption, filtering, and storage	Long	×	×		×	×	
Minimize use of machinery or vehicles that compact the soil and reduce its capacity to circulate water, oxygen, and nutrients	Long	×	×		×	×	×
Maintain vegetated surfaces to preserve the soil ecosystem and reduce heating, evaporation and erosion	Long	×	×		×	×	
Minimize the use of lawn fertilizers, pesticides, salt or other toxic substances and prevent their leaching into the ground or contaminating streams	Long	×	×		×	×	
Y M	TER						
Improve water quality of Lower Beaverdam Creek and other local water bodies through stormwater management, land protection, and reduction of fertilizers and pesticides	Short, Med., Long	×	×	×	×	×	×
Reduce town-wide impervious surface area to 18% from the current 23%	Long	×	×		×		×
Adopt on-site retention as the optimal approach to stormwater management	Short	×	×				
Implement a stormwater management program to reduce volume, velocity, and temperature of runoff	Medium	×	×			×	
Protect streamside lands and headwater areas of streams to mimic natural flows and reduce flooding and erosion	Long	×	×				×
Provide incentives to land owners for increasing stream buffers	Medium	×					

Short ≤ one year; Medium = up to 5 years; Long > 5 years \*Green Infrastructure Committee

				IMPLEM	ENTAT	N O I	
Green Infrastructure Plan Recommendations	Time Frame	Town	GIC*	Community Groups	Residents	Businesses/ Institutions	Other Agencies
Pursue green streets practices such as curb cutouts, permeable sidewalks and driveways, and bioretention	Short/ Ongoing	×					×
Increase awareness and stewardship of local streams as valued environments and community amenities through improved access and signage	Short	×	×	×			
Divert downspouts; install rain barrels; install rain gardens; consider vegetated rooftops	Short	×		×	×	×	
Install rain gardens on public property	Short	×					
Consider daylighting stretches of currently piped streams	Long	X					×
Continue Town Park restoration as a stormwater infiltration demonstration project and to reduce soil erosion	Medium	×	×	×			
Reduce trash and sediment input to streams; implement street cleaning practices	Medium	×	×	×	×	×	
Plant trees to shade and cool stream water	Medium	×			×	×	×
Initiate study of alternative stormwater management in Tributary 4 and other streams	Medium	X	X				×
Assess the extent, characteristics, and health of our three wetland areas	Long		X	X			×
$\left. igwedge$ Complete assessment of stream biological health and corridor characteristics	Medium		×	×			×
Monitor and report siltation from construction sites	Ongoing	×	×	×	×		
Advocate for county and state clean water services, programs, and incentives (e.g., audits of residential property runoff and how to reduce it; tax incentives for rain gardens)	Medium	×	×	×			
Advocate for Lower Beaverdam Creek and other streams to be included as signature natural features at redevelopment projects such as the New Carrollton Metro	Long	×	×	×			
TREES AND	VEGET	ATION	_				
Establish a town-wide tree canopy goal of 40%: 50% for residential property and 25% for industrial and institutional property, supported by goal-specific management plans	Establish, short; Implement, long	×	×				
Establish a dedicated program for the continuing replacement of downed or hazardous public and private trees	Medium	×	×		×	×	
Join the Baltimore Washington Partners for Forest Stewardship to collaborate on common goals with this growing network of forest managers, and encourage other forest owners in and adjacent to the town to join	Short	×	×				
Participate in the State of Maryland Chesapeake Bay Urban Tree Canopy goal effort	Short/ Ongoing	×	×				

Short < one year; Medium = up to 5 years; Long > 5 years \*Green Infrastructure Committee

Implement a Bay-friendly native vegetation (trees, shrubs, and other plants) restoration and management program including elimination and replacement of invasive species

 $\times$ 

 $\times$ 

 $\times$ 

Medium

 С Н					IMPLEM	ENTAT	N 0 -	
EVEF	Green Infrastructure Plan Recommendations	Time Frame	Town	GIC*	Community Groups	Residents	Businesses/ Institutions	Other Agencies
RLY (	Reduce percent of manicured turf area through Bay-friendly landscaping; mow high, leave grass clippings on lawns	Short	×	×		×	×	
G R E	Give preference to native trees and plants and avoid highly invasive species	Short	X	×		×	×	
EEN	Plant largest canopy trees appropriate to specific sites	Ongoing	X					
INI	Foster street and park tree health and longevity through best management practices (e.g., standards formulated by the International Society of Arboriculture)	Ongoing	×	×				×
FRAS	Explore a program to cost share services of a consulting arborist to provide residents with reduced cost tree health advice, for example, a few days each fall and spring	Medium	X	×	×	×		
TR	Provide incentives to promote native plants in backyard habitats	Medium	×	×	×			×
UCT	Remove invasive plants	Short/ Ongoing		×		×	×	
URE PI	Engage residents, organizations, and businesses in environmentally-oriented activities and events designed to build awareness and support for natural lands while improving ecosystem function	Medium	×	×		×	×	
_ A N	Work with Pepco to manage Parkway extension/Wayne Street right-of-way as a planned meadow	Medium	×	×	×			×
s U	Complete an assessment of vegetative health, soil conditions, water, and air quality	Medium	×	×	×			×
MN	Conduct a detailed urban tree canopy assessment	Medium	×	×				
ARY	Conduct an inventory and assessment of street trees and trees in parks and designated hubs	Medium	×	×	×			×
	Conduct an inventory and assessment of trees on private property	Medium	×	×	×	×		×
No	Maintain natural resource database to inform and guide optimal resource management	Ongoing		×	×			
vem	I W I W V	LIF	ш					
ber 201	Implement a wildlife protection plan tied to species, especially seasonal needs (e.g., bird nesting time, fawning season)	Medium	×	×		×		
1	Provide information and education resources about living with urban wildlife	Ongoing	×	×	×			×
	Encourage bird feeding in wintertime; provide water, especially during hot dry periods, add brush piles and plant shrubs for cover and food; recommend installing nesting boxes, bat houses, and bird feeders	Short	×	×	×	×	×	

Short s one year; Medium = up to 5 years; Long > 5 years \*Green Infrastructure Committee \*\*Planning Board

 $\times$ 

 $\times$ 

ENVIRONMENT

B U I L T
Ongoing

LAND USE AND THE

Plant native plant species that will attract butterflies and other pollinators and gardens

Short

PB\*,×

 $\times$ 

Inform and guide land use decisions by the principles of green infrastructure, land stewardship guidelines, and county water resources functional master plan

				IMPLEME	ENTAT	z o -	
Green Infrastructure Plan Recommendations	Time Frame	Town	GIC*	Community Groups	Residents	Businesses/ Institutions	Other Agencies
Convert underutilized and/or abandoned properties, as appropriate, to contribute to green ribbons and designated hubs and/or the natural stormwater management system	Long	×	×				
Create incentives for the voluntary restoration and stewardship of private open space and residential properties and integration with the natural lands network	Medium	×	×				×
Promote natural practices, green building techniques, and green infrastructure principles into neighborhood design, urban environments, and commercial/institutional areas (e.g., Prince George's County Hospital property, Arbor Street/Tuxedo Road, the 202 corridor)	Ongoing	×	X, PB**			×	×
Encourage the use of permeable surface materials through retro-fit incentives, permit approval process, and innovative zoning mechanisms	Ongoing		X, PB**			×	×
Replace impervious parking lots with permeable materials and consider rain gardens and green roofs (i.e., projects include redevelopment of commercial areas along Landover Road to increase permeable surface and decrease street entrances and exits)	Ongoing	×	X, PB**		×	×	
Restore the 58th place lots abutting the Baltimore-Washington Parkway to aid in stormwater management and create a community amenity	Medium	×	×	×			×
Revise transportation and streetscape standards, improving conditions for street tree growth and increasing tree canopy	Long	×	×				
Encourage the adoption of green infrastructure principles in building development and redevelopment — for example, to achieve better stormwater retention	Medium	×	×	×		×	
Explore leasing industrial or institutional flat roof space to a Cheverly solar energy cooperative	Long		×			×	
Extend the hubs by acquisition of the Joslyn Street lots, the water tower lot, and the State Highway Administration cloverleaf, which are now used as part of Woodworth Park	Long	×	×				×
Encourage consideration of "green" building methods and materials for residential uses	Medium	×	×	×	×		
Seek opportunities to build pedestrian/bicycle crossings to improve connectivity within Cheverly	Long	×	X, PB**				×
Collaborate with community and area organizations and government agencies on demonstration projects and educational initiatives	Long	×	×				
Reduce light and noise pollution	Medium	×	×			×	×
Encourage best practices to reduce ground level ozone by discouraging vehicle idling, especially by trucks and buses; install "no idling" signs where idling has been observed	Medium	×	×		×	×	×
Promote the use of public transportation and car pooling, bicycling, and walking; bundling errands; proper car maintenance (e.g., emission controls and tire pressure); driving at designated speeds	Ongoing		×	×	×	×	
Monitor particulate levels from industrial and construction sites in and around Cheverly	Ongoing					×	×
Advocate for full implementation and enforcement of the Clean Air Act	Ongoing	×	×	×			×

Short s one year; Medium = up to 5 years; Long > 5 years \*Green Infrastructure Committee \*\*Planning Board

### ACHIEVING THE GREEN VISION

# Community Leadership and Engagement

Applying Cheverly's Green Infrastructure Plan as a framework for conservation and investment decisions provides broad and equitable benefits. Successful implementation of the Green Infrastructure Plan ultimately depends upon the leadership of Cheverly's Town government, its citizens, commercial property

owners and businesses, and our local community organizations, churches, and schools all working as collaborative partners for the future. From the mayor to our schoolchildren, all have an important role in sustaining a thriving, healthy environment.



**JAN SMITH** 

# Resources and Funding

There are many well-tested strategies and examples demonstrating the benefit of applying green infrastructure. Many of the methods and practices are inexpensive and simple to apply. Others require larger

investments of time and effort. The Green Infrastructure Plan provides a framework for informing and guiding public decisions, outlines a range of community actions and strategically focused activities, and clarifies opportunities for different stakeholders to engage and support success. In many cases multiple priorities may be achieved with a few strategically placed investments.



Dedicated local financing will be necessary and valuable for both one-time projects (such as support for composting workshops) and for the longer-range administration, management, maintenance, and monitoring of Cheverly's green infrastructure. The town has already made numerous direct strategic investments. Limited town funds may be augmented through a number of vehicles such as revolving low-interest loan programs to support resident and organizational initiatives, and through county tax incentives and rebates. Nearby counties have implemented tax breaks for installing insulation and high-efficiency doors and windows, and for installing rain barrels and rain gardens. Cheverly should pursue these options with Prince George's County government leaders.

The Town of Cheverly and community organizations have demonstrated significant achievement on environmental and green infrastructure initiatives to date, and have been successful in securing a range of funding and resources to support progress. Time and effort should continue to focus on fundraising through grants as an effective approach for particular actions. Implementation of a green infrastructure plan and participation in regional and state initiatives raises Cheverly's profile and demonstrates our commitment to funders.

### MAKING A DIFFERENCE LOCALLY AND BEYOND

In a small town such as Cheverly, even seemingly small losses of natural areas, plants, and animal life can have a big and long-lasting impact. Implementing a comprehensive Cheverly Green Infrastructure Plan provides valuable local benefits that also extend to neighboring towns, the county and the larger Chesapeake Bay region.

Everyone wins with a fully implemented green plan. It provides an ongoing return on monetary, time and energy investments. Cheverly has the opportunity to implement green infrastructure policies and practices that result in improvements for the environmental, economic, and social well-being of all its residents and the community as a whole. Comprehensive implementation of the Cheverly Green Infrastructure Plan will serve as an example of citizen initiative and wise government practice locally and beyond.

JAMES NEWMAN

# Participate to Keep Cheverly Green! It's Easy to Get Involved.

- Set a goal to significantly reduce rainwater runoff from your property. Install rain barrels. Redirect downspout and sump pump water from the curb to a rain garden or water feature.
- Care for established trees and plant new ones along with additional native landscaping that attracts beneficial insects and restores Cheverly's historic green canopy and biodiversity.
- Remove invasive species from your yard and join community groups for invasive removal projects in our natural areas.
- Compost to enrich your soil and reduce the need for water, fertilizer, and pesticides.
- Mow at mulch height and leave grass clippings on the lawn to retain moisture.

- Create protective habitat for native wildlife with brush piles, bird houses, and bat boxes, and provide water and food for birds in winter.
- Consider installing permeable patios, sidewalks and driveways when you need to replace.
- Explore natural areas in town and nearby.
   Walk the trails and neighborhoods.
   Relax, play, and exercise outdoors.



JO DEUTSCH

- Support regional farmers and merchants and purchase locally grown food at the Cheverly Community Market and other local farmers' markets.
- Attend events to learn more about green infrastructure practices, provide input, and lend energy to initiatives.

The comprehensive Green Infrastructure Plan text and information and resources to help you take action are available on the Cheverly Green Plan website: www.GreenCheverly.org



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